U2-MDK1U

User's Manual

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RATOC Systems, Inc.

1. Introduction

1-1. Features

- The interface module includes RATOC's original circuit and firmware for high-performance USB2.0 to IDE conversion. It supports UDMA mode 4.
- RATOC's original circuit and firmware enables a removable HDD.
- Allows HDD exchanging without the System shutdown or restart.
- Support 'Big Drive'/48bit LBA.
- The HDD tray includes 80-conductors ATA133/100 cable and convenient pull-out handle.

1-2. Package Confirmation

Check your package contents:

- U2-MDK1
- One lock key
- Screws to mount a HDD
- USB2.0 mother board cable
  (2.54mm pitch single header 4pin --USB TypeB-M)
- User's Manual

NOTE
1.A HDD isn't included in the package.
2.If any of these items are missing from the retail package, contact your supplier immediately.

1-3. System Requirements

- Windows
  OS:Windows XP-SP1/2000/Me/98SE
  PC with USB port

1-4. Restrictions

(1)A HDD power cable is required exclusively.
For more information, refer to Chapter 2-2.
(2)If you exchange a HDD, refer to Chapter 4.
(3)The following HDDs are guaranteed to work fine with the U2-MDK1U. (Sept. in 2002).
For more information, refer to our web site:
(http://www.rexpccard.co.jp/english/)

IBM DTLA Series/IC35 Series
Maxtor DiamondMAX Series
Fireball Plus AS Series
Seagate Barracuda ATA Series

(4)Supports the following ATAPI MODE:
PIO MODE 4/DMA MODE 0-2/ULTRA DMA MODE 0-4

1-5. Caution

Just in case, you should back up important data stored in a HDD of your PC or in a HDD used with U2-MDK1U before you use it.
RATOC assumes no liability resulting from the loss of important data.

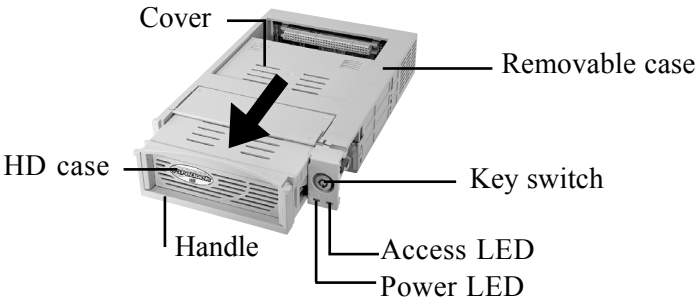
2. Setting

This chapter explains how to set up U2-MDK1U. Proceed to Chapter 2-1.

2-1.Attaching a HDD to U2-MDK1U

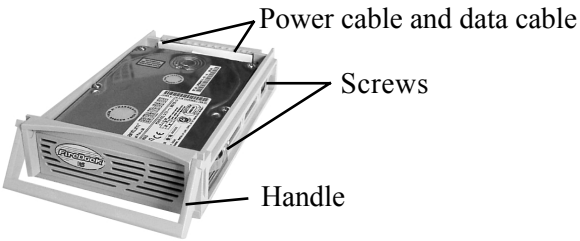
To attach a HDD to the U2-MDK1U, follow the steps:

(1)Turn the key switch to the UNLOCKED POSITION. Then, lift handle to release the HD case from the removable case and pull out.



(2)Slide cover off the HD case and connect power and data cable to the HDD. Mount the HDD in the HD case with the screws provided.

(NOTE)You must set [MASTER] position at HDD jumper setting. For a Western Digital HDD, set [SINGLE] position at HDD jumper setting. For more information, refer to its manual.



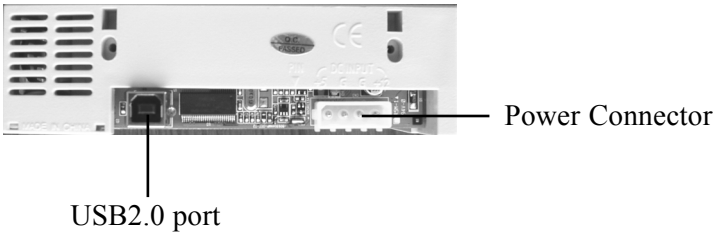
(3)Reinstall cover on the HD case and push the HD case back into the removable case.
(4)Lower handle and lock the HD case with the lock key provided. If you don't lock it, U2-MD1U won't work.

Next, proceed to 2-2 to attach the U2-MDK1U to your computer.

2-2.Attaching the U2-MDK1U to your computer

(1)After attaching the HDD at Chapter 2-1, confirm your computer is turned off. Then, attach the U2-MDK1 to a 5 inch bay as shown below.

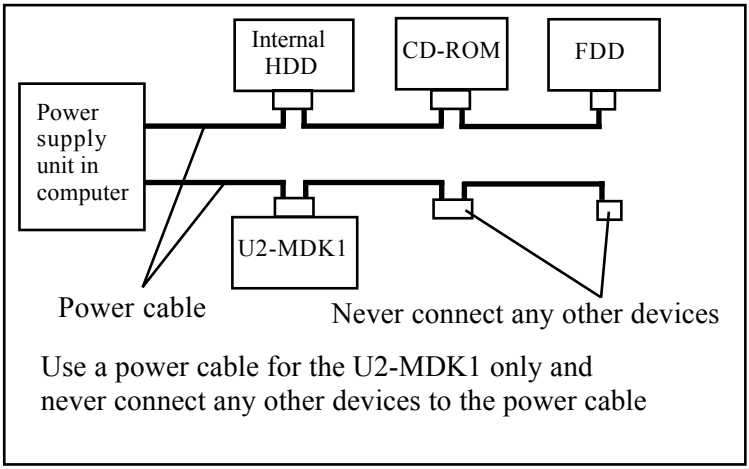
(2)You need a power cable for the U2-MDK1U only. You should not connect other devices other than the U2-MDK1U to the power cable.
Connect the cable to the power connector on the rear panel as shown below. Refer to **[Connecting a HDD power cable]** in the next page for more information. **After connecting the cable, proceed to Chapter 2-3.**



[Connecting a HDD power cable]

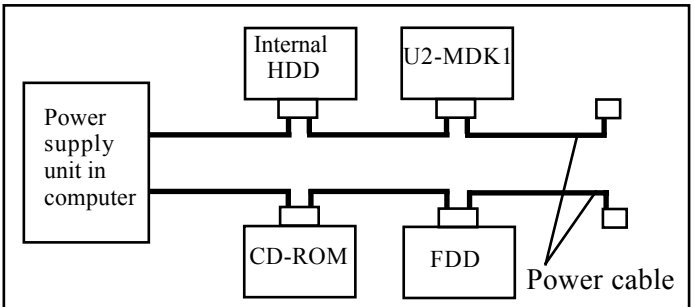
Sometimes the HDD in the U2-MDK1 causes in-rush current problem at the startup. To avoid the power shortage or the influence to other devices, we strongly recommend to use a separate power connector for each HDD as shown in the RIGHT CONNECTION.

RIGHT CONNECTION



Use a power cable for the U2-MDK1 only and never connect any other devices to the power cable

WRONG CONNECTION



If you connect any other devices such as a internal HDD to the same power cable the U2-MDK1 uses as shown above, the power supply unit can't supply enough power for the internal HDD unit to spin up and fails to work the HDD because of the shortage of power.

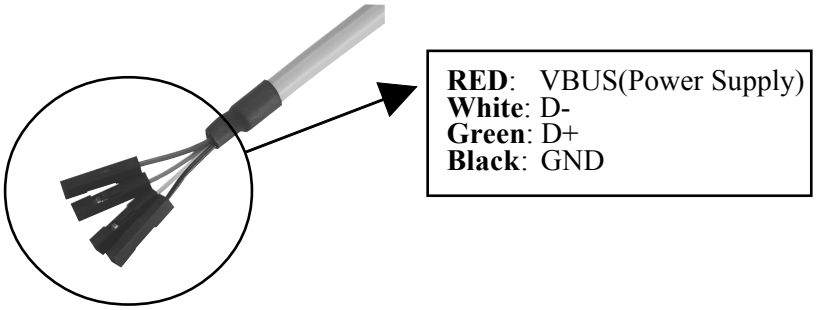
2-3.Connecting the bundled USB2.0 mother board cable

NOTICE

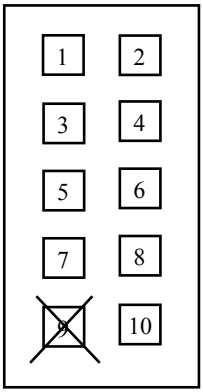
- Connect the bundled USB2.0 cable at your own risk.RATOC assumes no liability resulting from the breakage of a mother board or other devices, caused by connecting the cable mistakenly.
- The bundled USB2.0 mother board cable is certified with USB2.0 logo, but the cable doesn't guarantee the USB 2.0 performance with a mother board.
- Before connecting the cable, be sure to turn off your system and unplug the power cable. To avoid the breakage with static charge or shocks, be careful to read the user's manual that accompanied your mother board.

Follow the steps carefully to connect the USB2.0 mother board cable.

(1)The connector at the side of a mother board comprises the following 4 kinds of connectors.



(2)Connect these connectors to a USB2.0 connector on a mother board. Please note USB2.0 pin assignment or pin names vary in different mother boards, so we take as an example a mother board of which pin assignment is recommended by Intel. See Fig.1.

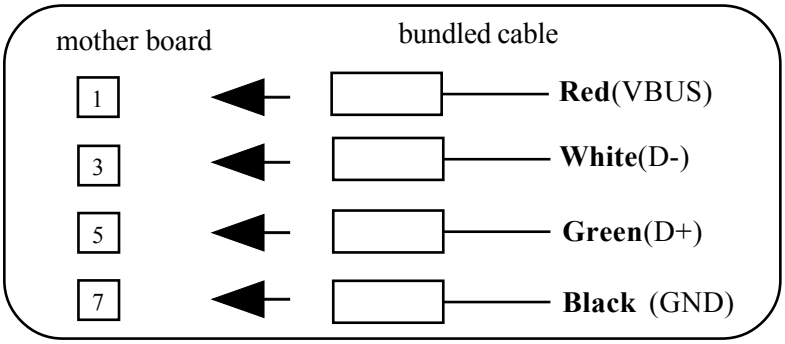


Pin#1:	USB POWER	Pin#2:	USB POWER
Pin#3:	USB P-	Pin#4:	USB P-
Pin#5:	USB P+	Pin#6:	USB P+
Pin#7:	GND	Pin#8:	GND
Pin#9:	Don't care	Pin#10:	NC(Don't care)

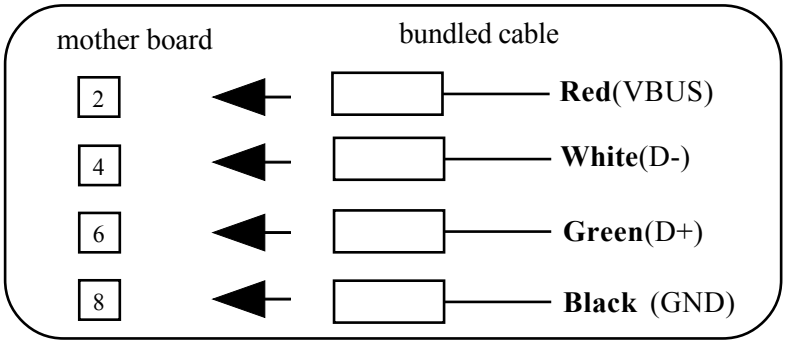
pin names

(Fig.1)
pin assignment
recommended by Intel.

For pin assignment recommended by Intel, connect the bundled USB2.0 mother board cable as shown in Fig.2 or Fig3.:



(Fig.2)

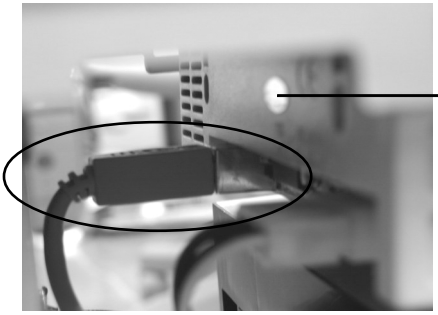


(Fig.3)

Please note USB2.0 pin assignment or pin names vary in different mother boards. If your pin assignment or pin names are different from Fig1. shown in the previous page, refer to the table below. Be sure to read user's manual that accompanied your mother board for more information.

Terms of pin names on a mother board	The name of the bundled cable
VCC, USB POWER, (+)5V, POWER, etc. Find a word indicating "Power".	RED(VBUS)
DATA-, USB-, USB Dn-(n means number), DMn(n means number), etc. Find a word indicating "Minus".	White(D-)
DATA+, USB+, USB Dn+(n means number), DPn(n means number), etc. Find a word indicating "Plus".	Green(D+)
GND, Ground, etc.	Black (GND)

(3)Connect the USB2.0 connector to the rear panel of the U2-MDK1U as shown below.



Proceed to Chapter 3.Installation after connecting it.

3. Installation

This chapter explains how to install the driver.

•If you have Windows 98SE, proceed to Chapter 3-1.
•If you have Windows Me/2000/XP, proceed to Chapter 3-2.
•If you have Mac OS, proceed to Chapter 3-4.

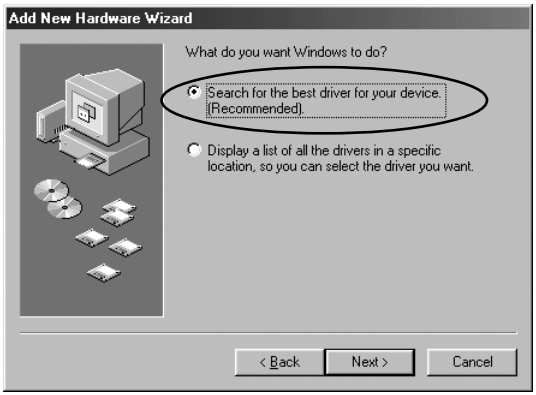
3-1.Windows 98SE

(1)Go the the web site(http://www.rexpccard.co.jp/english/support/index.html) and download Windows 98SE driver for the U2-MDK1U and extract it.

(2)Turn the key switch to the LOCKED POSITION.
The following wizard will appear.

Add New Hardware Wizard
This wizard searches for new drivers for:
USB-IDE Dock
A device driver is a software program that makes a hardware device work.
< Back
Next >
Cancel

(2)Select the **[Search for the best driver for your device.(Recommended)]** option and click **[Next]**.


Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended).
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

(3)Select the **[Specify a location]** option and click **[Browse]**to specify the driver.(The following screen as an example specifies the driver at the U2MDK1U folder in C drive. The location of the driver depends on where you downloaded the driver in your computer at step 1)

Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
C:\U2MDK1U
Browse...
< Back
Next >
Cancel

(4)The driver is found. Click **[Next]**.

Add New Hardware Wizard
Windows driver file search for the device:
RATOC USB MassStorage Device WDM
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
C:\U2MDK1U\RSBULK.INF
< Back
Next >
Cancel

(5)Windows has finished installing the driver. Click **[Finish]**. Proceed to Chapter 3-3 to confirm the installation.

Add New Hardware Wizard
RATOC USB MassStorage Device WDM
Windows has finished installing the software that your new hardware device requires.
< Back
Finish
Cancel

3-2.Windows Me/2000/XP

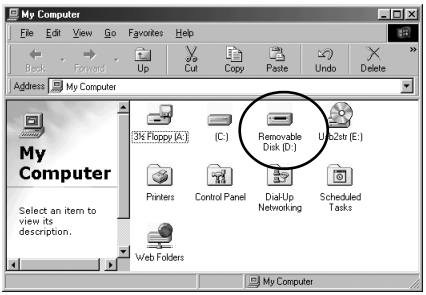
Turn the key switch to the LOCKED POSITION.
The driver will be copied automatically. Proceed to Chapter 3-3 to confirm the installation.

3-3.Confirming the installation

Open **[My Computer]**. If you can find a Removable Disk icon as shown below, the driver installation is successful.
When you double click on the Removable icon and get an error saying the device is not ready, check the following:

1)The key switch must be in the LOCKED POSITION.
2)The HDD in the U2-Dock must be formatted.
Refer to Chapter 5 for formatting.

Proceed to Chapter 4 for how to use the U2-MDK1.

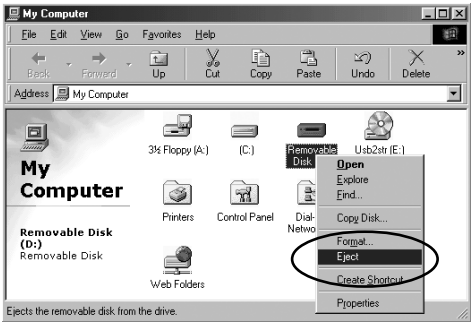


4. Exchanging HD cases

This chapter explains how to exchange HD cases.

To exchange HD cases, follow the steps:

(1)Open **[My Computer]** and right-click on the removable icon. The pull-down menu will appear. Select the **[Eject]**.



(2)Turn the key switch to the UNLOCKED POSITION. (The removable icon still appears even after turning the key switch to the UNLOCKED POSITION.)

(3)Wait about 5 seconds until the HDD spins down completely. Then,exchange HD cases.

(NOTE)
If you double-click on the removable icon before you turn the key switch to the LOCKED POSITION, you will see the following warning message. In this case, after turning the key switch to the LOCKED POSITION, double-click on the icon.

(OS:Windows 98SE)

(OS:Windows Me/Windows 2000/XP)

(4)Turn the key switch to the LOCKED POSITION. The HDD will spin up. After a few seconds, the Access LED (RED) will flash. You may access to the HDD after the Access LED flashed.

5. Registration and Tech-support

5-1. How to Register

We highly recommend to register yourself as our customer through our on-line registration.

1. On the Internet, access our site.
(**https://regist.ratocsystems.com/english/**)

2. Follow on-screen instructions to register.

3. Fill out and submit the registration form.

5-2. Software Update and Support

-Software Update-
The latest driver and application software are subject to change for improvement or bug fix.
You can download the latest version from our web site.
(http://www.ratocsystems.com/english/)

-Technical Support-
You can get a Tech support from RATOC at the following.
(Open Monday - Friday, 9:30A.M. to 5:00P.M.(PST))
RATOC Systems International,Inc. Tech support
Address: 1933 O'Toole Avenue Suite A109
SanJose, CA 95131, U.S.A.
Phone : (408)955-9400
Fax : (408)955-9402
E-mail : int-support@rexpccard.co.jp
Web : http://www.ratocsystems.com/english/

6. Specifications

Model	U2-MDK1
Interface	Upstream USB2.0 480Mbps one Type B(F) port. Downstream IDE ATA133/100/66/33/PIO4 compatible.
Data transfer rate	For a computer:480/12 Mbps For a drive:66 MBytes
Drive	3.5 inch ATA HD(ATA 133/100/66/33), ATAPI MO, ATAPI Zip
Electrical: Input	5V/12V
Power dissipation	5V/220mA(TPY.), 250mA(MAX), 12V/60mA(FAN) (Excluding HDD power dissipation)
Size	147mm(5.78in)(W) x 213mm(8.38in)(L) x 38mm(1.49in)(H)
Weight	490g(17.3oz)

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Regulatory Agency Notice

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

(1) Reorient or relocate the receiving antenna.
(2) Increase the separation between the equipment and receiver.
(3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
(4) Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance may result in this unit not complying with FCC Rules Part 15.

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